- A method of determining the concentration of an analyte in a sample of low 1. transmissivity, said method comprising:
- producing a sample beam from a sample of low transmissivity and a (a) reference beam from a reference:
 - producing a null signal from said sample and reference beams; and (b)
- (c) deriving the presence of said analyte in said sample of low transmissivity from said null signal.

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- 2. The method according to Claim 1, wherein said method comprises using forward and backward beams produced from at least one infrared radiation source to produce said sample and reference beams.
- 15 The method according to Claim 1, wherein said method further comprises passing light through an interferometer.
 - 4. The method according to Claim 1, wherein said forward and backward beams are produced from a single infrared radiation source.

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- 5. The method according to Claim 1, wherein said forward and backward beams are produced from two infrared radiation sources.
- 6. A method of determining the concentration of an analyte in a sample of low transmissivity, said method comprising

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producing a sample beam from a sample of low transmissivity and a (a) reference beam from a reference using forward and backward beams produced from at least one infrared radiation source;

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producing a null signal from said sample and reference beams, with the (b) proviso that said steps (a) and (b) further comprise passing light through an interferometer: and

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- (c) deriving the presence of said analyte in said sample of low transmissivity from said null signal.
- 7. The method according to Claim 6, wherein said forward and backward beams are produced from a single infrared radiation source.
 - 8. The method according to Claim 6, wherein said forward and backward beams are produced from two infrared radiation sources.
- 9. The method according to Claim 6, wherein said null signal is optically produced by combining said sample and reference beams prior to detection at a single detector.
 - 10. The method according to Claim 6, wherein said null signal is electronically produced following detection of said sample and reference beams at two separate detectors.
 - 11. The method according to Claim 6, wherein said method comprises:
 - (a) producing a forward beam and a backward beam with an interferometer from a single infrared radiation source;
 - (b) directing said forward beam into said sample of low transmissivity and / directing said backward beam into a reference and collecting a sample beam and a reference beam, respectively;
 - (c) combining said sample and reference beams to produce a nulled beam;
 - (d) detecting said nulled beam with a single detector to obtain a detected null signal; and
 - (e) deriving the presence of said analyte in said sample of low transmissivity from said detected null signal.
 - 12. The method according to Claim 6, wherein said method comprises:
- 30 (a) producing a forward beam and a backward beam from at least one infrared radiation source;

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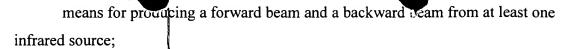
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- introducing said sample and reference beams into an interferometer and producing a null signal from said sample and reference beams following their exit from 5 said interferometer; and
 - (d) deriving the presence of said analyte in said sample of low transmissivity from said null signal.
- 13. The method according to Claim 6, wherein said sample of low transmissivity is at 10 least one of highly reflective and highly absorptive.
 - 14. The method according to Claim 13, wherein said sample is a physiological sample.
- 15 15. The method according to Claim 14, wherein said physiological sample is selected from the group consisting of blood, tissue or a derivative thereof.
 - 16. The method according to Claim 6, wherein said reference comprises water.
- 17. The method according to Claim 16, wherein said reference is a fluid. 20
 - 18. The method according to Claim 16, wherein said reference is a solid.
 - 19. The method according to Claim 6, wherein said reference has a variable pathlength.
 - 20. The method according to Claim 6, wherein said analyte is glucose.
 - 21. A dual beam infrared spectrometer device for use in determining the concentration of an analyte a sample of low transmissivity, said device comprising:

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means for producing a sample beam and a reference beam from said forward and backward beams; and

- 5 means for producing a null signal from said sample and reference beams.
 - 22. The device according to Claim 21, wherein said device further comprises an interferometer means.
- 10 23. The device according to Claim 21, wherein said device further comprises a means for deriving said analyte concentration from said null signal.
 - 24. The device according to Claim 21, wherein said device comprises a reference.
- 15 25. The device according to Claim 24, wherein said reference is a variable path length reference.
 - 26. The device according to Claim 24, wherein said reference comprises a liquid.
- 20 27. The device according to Claim 24, wherein said reference comprises a solid.
 - 28. The device according to Claim 21, wherein said device further comprises a sample of low transmissivity.

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